

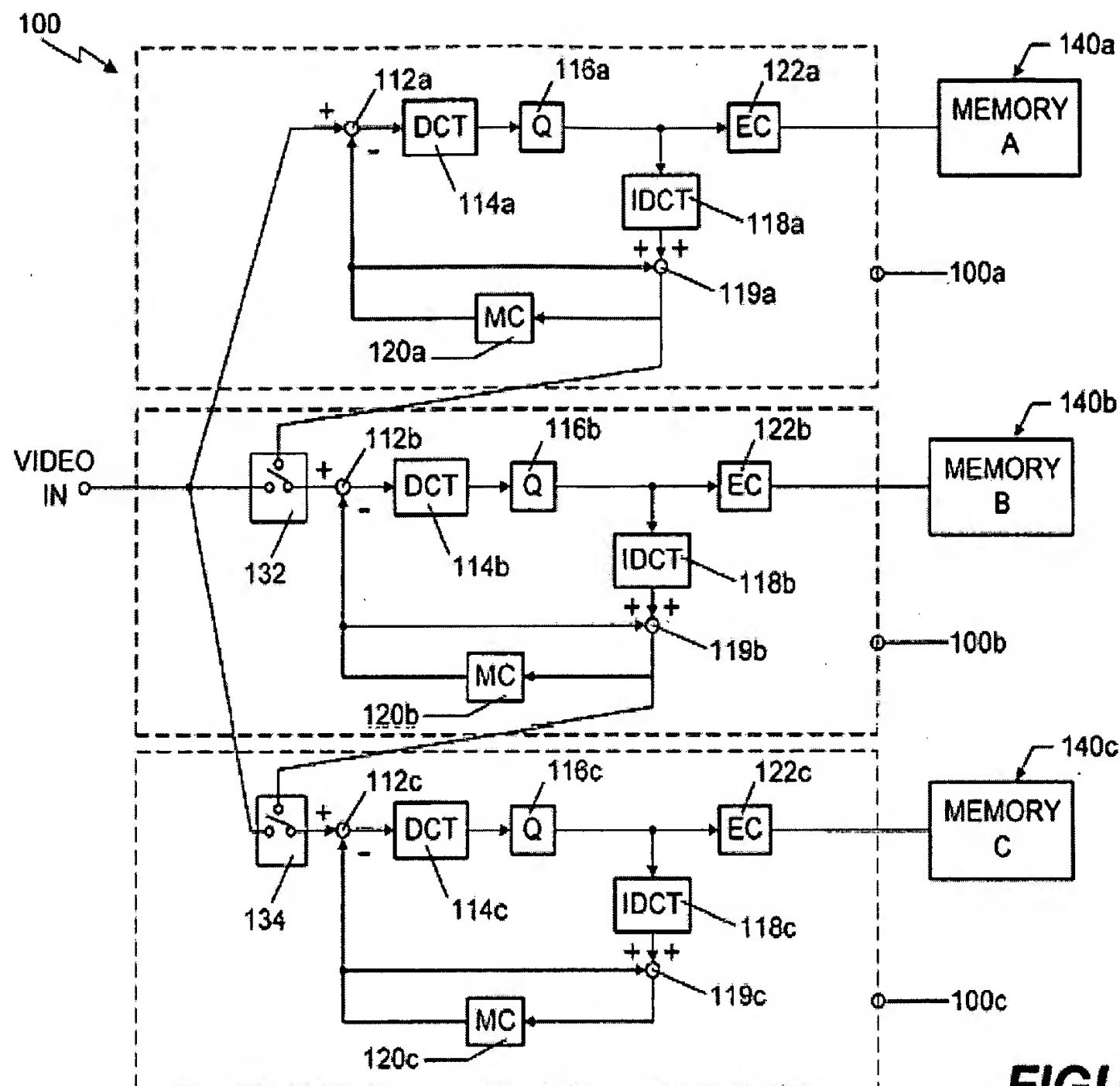
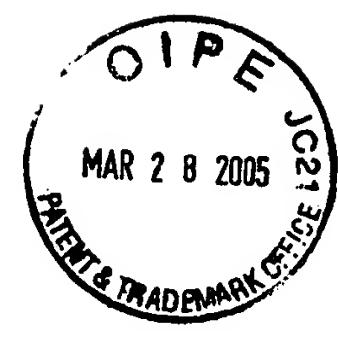
## REMARKS

The Office Action dated January 25, 2005 has been received and carefully considered. Reconsideration of the outstanding rejections in the present application is respectfully requested based on the following remarks.

### **Anticipation Rejection of Claims 1-2 and 42-43**

At page 3 of the Office Action, claims 1-2 and 42-43 were rejected under 35 U.S.C. Section 102(e) as being anticipated by Girod (U.S. Patent No. 6,480,541). This rejection is respectfully traversed.

Claim 1, from which claim 2 depends, recites the limitations of determining if a predetermined criteria is met by a first representation of a display data, wherein the first representation of the display data includes a first plurality of display streams to be transmitted to a first plurality of display devices. Claim 1 further recites the limitations of compressing a first display stream of the first plurality of display streams when it is determined that the first representation of the display data does not meet the predetermined criteria. With respect to the predetermined condition limitations, the Examiner asserts that “the predetermined criteria is the amount of available bandwidth,” where “[t]he predetermined criteria or available bandwidth is determined for each channel. The display stream, or video, having the highest bit rate tolerable by the channel is then selected.” *Id.*, p. 4. For ease of reference, Figure 2 of Girod and the cited passage of Girod are reproduced below:



**FIGURE 2**

*Figure 2 of Girod*

Once the video signal is coded and stored, the stored signals may be used as part of a video-on-demand server to provide the same video signal at any of a number of different bit rates. The manner in which the data is coded and stored allows for the bit rate to be changed during a transmission of the video signal by switching the output from, for example, memory 140a to memory 140b.

Multiple coders 100a, 100b, 100c are each designed for coding data with a different level of compression, so that each provides video data for transmission at a different bit rate. In general, the greater the number of quantization levels used by the coder, the higher the quality of the transmitted image, and the higher the bit rate. Thus, in the tradeoff between image quality and transmission bandwidth, the quality of a transmission channel often determines the bandwidth which will allow real time decoding and display at the receiving end of the transmission. If a variety of bit rates are available, handshaking commands between the destination and the source can be used to select the highest bit rate tolerable by the transmission channel (for real time decoding), thereby providing the best possible image quality.

In the FIG. 2 embodiment, coder 100a codes the video signal with a coarseness of quantization which results in its output having the lowest bit rate of the signals provided by the coders. Similarly, the signal output by coder 100b has a less coarse quantization which produces the next higher bit rate, and the signal output by coder 100c has an even less coarse quantization than coder 100b, which results in the highest bit rate. Thus, if a transmission channel being used allows only a low bit rate, the decoder sends a request for the coded version of the video signal having the lowest bit rate (i.e. the signal coded by coder 100a).

*Girod, col. 7, line 47 – col. 8, line 14 (emphasis added).*

Even if it is assumed, *arguendo*, the multiple instances of the video in signal provided to the multiple coders of Girod could be construed together as a first representation of a display data including a plurality of display streams, Girod provides no disclosure that the video in signal prior to compression is provided directly to the transmission channel 150. The analysis of the video in signal itself before compression with respect to the available bandwidth of the transmission channel 150 would provide no utility as the video in signal itself is not transmitted and therefore has no relevance with regard to the available bandwidth of the transmission channel 150. Accordingly, Girod provides no disclosure related to determining if a predetermined criteria is met by the video in signal prior to compression of the video in signal as would be consistent with claim 1. Instead, Girod discloses that a compressed version of the video in signal is selected in view of the available bandwidth. *See Girod, col. 8, lines 33-39*

(“[t]he capacity of transmission channel 150 is determined . . . . Once the highest possible bit rate is determined, the selector 130 directs the output bitstream from the appropriate memory unit to the receiver over the transmission channel.”); *see also Girod*, col. 8, line 53 – col. 9, line 5.

Thus, Girod discloses the available bandwidth of the transmission channel 150 is only considered after compressing the video in signal. In sharp contrast, claim 1 is directed to determining whether the first representation of the display data meets a predetermined criteria prior to compressing (or further compressing) one of the display streams of the display data. Thus, Girod discloses compressing and then determining if the available bandwidth is met by the resulting compressed data, whereas claim 1 is directed to determining if a predetermined available bandwidth is met and then compressing (or further compressing) accordingly.

In addition, the Applicant respectfully submits that neither Figure 2 nor the cited passage of Girod disclose the limitations of a first representation of a display data including a first plurality of display streams as recited by claim 1. With respect to these limitations, the Examiner asserts that the “first plurality of display streams is the video data coded at the first level [of Girod]” and cites the passage of Girod at col. 7, line 50 – col. 8, line 14 in support of this assertion. *Office Action*, pp. 3-4. The Examiner further asserts that Figure 2 of Girod “discloses the video signal, indicated at the video in location, being split into a plurality of display streams, wherein the first stream goes to 112a, the second stream goes to 112b, and the third stream is sent to 112c.” *Id.*, p. 2. Contrary to the Examiner’s assertions, Girod provides no disclosure that the video in signal is “split into a plurality of display streams.” *See Office Action*, p. 2. Instead, Girod provides that the same video in signal is provided to each of the coders 100a-100c. *See, e.g., Girod*, col. 7, lines 41-43 (disclosing that “the coding apparatus 100 of FIG. 2 is arranged to allow the coding and storage of the same video signal at a variety of different bit rates.”) Thus, Girod merely discloses that multiple instances of the same video in signal are provided to the coders 100a-100c, and thus discloses only that multiple instances of the same “representation of a display data” (the video in signal) is provided to multiple coders.

Claims 42 and 43 recite the similar limitations of a set of instructions to manipulate one or more processors to receive a display data, determine if a predetermined criteria is met by a first representation of the display data, wherein the first representation of the display data includes a first plurality of display streams to be transmitted to a first plurality of display devices, and compress a first display stream of the first plurality of display streams when it is determined

that the first representation of the display data does not meet the predetermined criteria. As noted above, Girod fails to disclose the limitations of determining if a predetermined criteria is met by the first representation of the display data before it is compressed as recited by claims 42 and 43. Moreover, as also noted above with respect to claim 1, Girod reference fails to disclose a first representation of a display data including a plurality of display streams as recited by claims 42 and 43.

As demonstrated above, the Office Action fails to establish that Girod discloses at least the limitations recited by claims 1, 42 and 43 of: (1) a first representation of a display data including a plurality of display streams; and (2) compressing a first display stream of the plurality of display streams when it is determined that the first representation does not meet the predetermined criteria. Accordingly, the Office Action fails to establish that Girod discloses each and every limitation of claims 1, 42 and 43, as well as claim 2 at least by virtue of its dependency from claim 1.

In view of the foregoing, it is respectfully submitted that the anticipation rejection of claims 1, 2, 42 and 43 is improper at this time and the withdrawal of this rejection therefore is respectfully requested.

#### **Obvious Rejection of Claims 7, 9-12, 15-18, 22-26, 28, 30-32, 34-36, 39-41 and 44-54**

At page 5 of the Office Action, claims 7, 9-12, 15-18, 22-26, 28, 30-32, 34-36, 39-41 and 44-54 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Girod.<sup>1</sup> This rejection is respectfully traversed.

As noted above, Girod fails to disclose at least the limitations of: (1) a first representation of a display data including a plurality of display streams; (2) determining if a predetermined criteria is met by the first representation prior to compression; and (3) compressing a first display stream of the plurality of display streams when it is determined that the first representation does not meet the predetermined criteria as recited by claims 1, 42 and 43. Accordingly, Girod fails to disclose each and every limitation of claims 7, 9-12, 15-18, 22-26, 28, 30-32 and 45-48 at least by virtue of their dependency from one of claims 1, 42 or 43.

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<sup>1</sup> The Office Action lists claims 3-12, 15-18, 22-26, 28, 30-32, 34-36, 39-41 and 44-54 as rejected. However, claims 3-6 and 8 were canceled in a response mailed on August 24, 2004. Accordingly, only claims 1, 2, 7 and 9-54 are pending in the present application.

Moreover, these dependent claims recite additional limitations neither disclosed nor suggested by Girod. To illustrate, claim 9 recites the additional limitations of wherein the predetermined criteria is determined to be met when each display stream of the first plurality of display streams is expected to be transmitted in a manner that allows for real time simultaneous display of each of the first plurality of display streams. With respect to these limitations, the Examiner asserts that Girod discloses ‘a predetermined criteria is met when it is expected that each display stream can be transmitted in [a] manner for real time simultaneous display’. *Office Action*, p. 5. However, the Examiner’s characterization of claim 9 has omitted the limitations that the first plurality of display streams is expected to be transmitted in a manner that allows for realtime simultaneous display of each of the first plurality of display streams. Even assuming that the Examiner’s characterization of the multiple instances of the video in signal of Girod properly constitutes a plurality of display streams, Girod teaches away from providing each of the multiple instances of the video in signal for transmission, much less for real time simultaneous display. In fact, Girod fails to disclose or suggest that the display stream analyzed can be further compressed.

Moreover, if it is assumed that, alternately, the compressed versions of the video in signal instead are a plurality of display streams in the context of claim 9, Girod teaches away providing more than one of the compressed versions of the video in signal for transmission in a manner that allows for realtime simultaneous display of each of the compressed versions of the video in signal. Girod merely discloses that the various compressed versions may be time multiplexed (thereby precluding simultaneous display) so as to generate a single data stream that has a different quantization rate at different times to match the available bandwidth of the transmission channel 150. *See, e.g., Girod*, col. 8, lines 24-52; *see also Girod*, Figure 3 (particularly switch 130 connected to the outputs of the memories 140a-140c). As such, no data from two or more of these compresses versions can be transmitted for simultaneous display. Turning to the passage of Girod at col. 10, lines 16-26 as cited by the Office Action, it is respectfully submitted that this passage provides no disclosure related to the realtime simultaneous display of each of a plurality of display channels as recited by claim 9 and in fact teaches away from these limitations.

Claims 34-36 and 44 depend from claim 33 and claims 39-41 depend from claim 37. Claims 33 and 37 are rejected in view of a combination of Girod and Putzolu (U.S. Patent No. 6,584,509). As claims 34-36 recite limitations in addition to the limitations recited by the base

claim 33 and claims 39-41 recite limitations in addition to the limitations recited by the base claim 37, it is unclear how claims 34-36 and 39-41 can be rejected in view of only one reference whereas the base claims 34 and 37 are rejected under a combination of references. Accordingly, the rejection of claims 34-36, 39-41 and 44 is addressed in a subsequent section along with the rejection of claims 34 and 37.

Claim 49, from which claims 50-54 depend, recites the limitations of determining whether a transmission of a data stream having a plurality of multimedia channels is expected to meet a predetermined criteria, compressing at least one of the multimedia channels in the data stream to generate a first compressed data stream when the transmission of the data stream is not expected to meet a predetermined criteria, and determining whether a transmission of the first compressed data stream is expected to meet the predetermined criteria. With respect to claim 49, the Examiner asserts that Girod

discloses 'determining for each stream whether an actual transmission time for a video frame matches a predicted transmission time within a predetermined tolerance' (Girod: column 7, lines 50-67 – column 8 [sic], wherein the actual and predicted transmission times are the predetermined criteria and is related to the encoding and transmission times. Initially the highest bit rate is selected. The examiner notes that since bit rate is a function of time, the highest bit rate can be equated to the predicted time. The encoder then encodes the stream, according to the highest bit rate characteristics, sends the stream to the memory, and transmits the stream. If the bandwidth of the channel is decreased, a lower bitstream is selected meaning that the actual time is not matching the predicted time. The encoder then encodes the stream at the lower rate and thus avoids overflow.

*Office Action*, pp. 5-6.

As the above-provided passage illustrates, the Office Action does not directly address the specific limitations recited by claim 49, but instead improperly equates the limitations of claim 49 with the limitations of claims 10-12 (depending from claim 1, which is separate and distinct from claim 49). *See Id.*, p. 5. Accordingly, the Applicant respectfully submits that the Office Action fails to establish a *prima facie* case of obviousness of claim 49 in view of Girod.

Regardless, it is respectfully submitted that Girod fails to disclose or suggest a number of limitations of claim 49. As noted above, Girod discloses determining only whether a compressed version of the video in signal meets an available bandwidth. Thus, as Girod provides no disclosure or suggestion that the compressed version of the video in signal is a data stream having a plurality of multimedia channels, Girod necessarily fails to disclose the limitations of

determining whether the transmission of a data stream having a plurality of multimedia channels meets a predetermined criteria as recited by claim 49.

Moreover, claim 49 recites the limitations of compressing at least one of the multimedia channels in the data stream to generate a first compressed data stream when the transmission of the data stream is not expected to meet a predetermined criteria. As noted above, Girod discloses that any analysis *vis-à-vis* the available bandwidth is performed using only a compressed version of the video in signal (and not the uncompressed video in signal itself) and Girod provides no disclosure related to further compressing the compressed versions of the video in signal based on such an analysis. Accordingly, Girod necessarily fails to disclose or suggest compressing at least one of the multimedia channels in the data stream when the transmission of the data stream is not expected to meet a predetermined criteria as recited by claim 49.

Claim 49 additionally recites the limitations of determining whether a transmission of the first compressed data stream is expected to meet the predetermined criteria. Thus, in combination with the other limitations discussed above, claim 49 recites the limitations of determining (1) whether a transmission of the data stream is expected to meet a predetermined criteria and (2) whether a transmission of the data stream with a compressed multimedia channel (i.e., the first compressed data stream) is expected to meet the predetermined criteria. As established above, Girod discloses determining only if a compressed version of the video in signal meets an available bandwidth and provides no disclosure related to determining whether a data stream itself meets a predetermined criteria as well as the data stream after having one of its multimedia channels compressed meets the predetermined criteria, as would be consistent with claim 49.

As the Office Action does not specifically establish how Girod discloses or suggests any of the particular limitations of claim 49, the Office Action fails to establish that Girod discloses each and every limitation of claim 49, as well as claims 50-54 at least by virtue of their dependency from claim 49. Moreover, the Applicant respectfully submits that Girod in fact fails to disclose or suggest at least the limitations of claim 49 of: (1) determining whether the transmission of a data stream having a plurality of multimedia channels meets a predetermined criteria; and (2) compressing at least one of the multimedia channels in the data stream when the transmission of the data stream is not expected to meet a predetermined criteria.

In view of the foregoing, it is respectfully submitted that the obviousness rejection of claims 7, 9-12, 15-18, 22-26, 28, 30-32 and 45-54 is improper at this time and the withdrawal of this rejection therefore is respectfully requested.

### **Obvious Rejection of Claims 13, 14 and 19-21**

At page 8 of the Office Action, claims 13 and 14 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Girod in view of Norsworthy (U.S. Patent No. 6,144,402). At page 9 of the Office Action, claims 19-21 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Girod in view of Keren (U.S. Patent App. Pub. No. 2001/0026591). These rejections are respectfully traversed.

Claims 13, 14 and 19-21 depend from claim 1. As noted above, Girod fails to disclose or suggest at least the limitations of claim 1 of: (1) a first representation of a display data including a plurality of display streams; (2) determining if a predetermined criteria is met by the first representation; and (3) compressing a first display stream of the plurality of display streams when it is determined that the first representation does not meet the predetermined criteria. The Office Action does not assert that Norsworthy or Keren disclose or suggest any of these limitations. Accordingly, the Office Action fails to establish that the proposed combinations of Girod, Norsworthy and Keren disclose or suggest each and every limitation of claims 13, 14 and 19-21 at least by virtue of their dependency from claim 1. Moreover, these claims recite additional limitations neither disclosed nor suggested by Girod, Norsworthy nor Keren.

To illustrate, claim 19 recites the additional limitations of wherein the display data includes data from a plurality of sources. The Examiner relies on the general assertion that Keren “teaches that it is well known in the cable distribution art to have a plurality of sources supply display data.” *Office Action*, p. 9. However, the Examiner construes Girod as teaching a display data composed of multiple instances of the same video in signal. As the alleged display data is represented by the same video in signal and as the video in signal can be provided from only one source, the “display data” cannot be from a plurality of sources as allegedly taught by Keren as asserted by the Examiner. Accordingly, in addition to the proposed combination of Girod and Keren failing to disclose or suggest all of the limitations of claim 9, the modification of the system of Girod based on the teachings of Keren is counter to the stated functionality of the Girod system.

## **Obvious Rejection of Claims 27, 29, 33-41 and 44**

At page 10 of the Office Action, claims 27, 29, 33-41 and 44 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Girod in view of Putzolu.<sup>2</sup> This rejection is respectfully traversed.

Claims 27 and 29 depend from claim 1. As noted above, Girod fails to disclose or suggest at least the limitations of claim 1 of: (1) a first representation of a display data including a plurality of display streams; (2) determining if a predetermined criteria is met by the first representation; and (3) compressing a first display stream of the plurality of display streams when it is determined that the first representation does not meet the predetermined criteria. The Office Action does not assert that Putzolu discloses or suggests any of these limitations. Accordingly, the Office Action fails to establish that the proposed combination of Girod and Putzolu discloses or suggests each and every limitation of claims 27 and 29 at least by virtue of their dependency from claim 1. Moreover, these claims recite additional limitations neither disclosed nor suggested by Girod or Putzolu.

To illustrate, claim 27 recites, in combination with intervening claim 26, the limitations of selecting the first display stream from the first plurality of display streams using a predefined selection method, wherein the predefined selection method includes a round robin method. As noted above, Girod discloses selecting a compressed version of the video in signal for transmission on the transmission channel 150 based on the available bandwidth. As the selection method of Girod is directed to ensuring that requirement that the transmitted data is within the available bandwidth is met, the use of a round robin method as allegedly disclosed by Putzolu would be counter to this requirement as a compressed version of the video in signal that would exceed the available bandwidth likely would be selected with relative frequency.

Claim 33, from which claims 34-36 and 44 depend, recites the limitations of determining, for each display stream of a plurality of display streams, if an estimated transmit time meets an actual transmit time within a predetermined tolerance. With respect to these limitations, the Examiner equates the maximum bit rate of Girod with the predetermined tolerance and “notes that the bit rate is measured as a function of time. The actual and predicted times are calculated

to ensure there is not too much data being transmitted. The corresponding compressed bitstream that maximizes the channel bit rate is then selected to transmit.” *Office Action*, p. 11. The Examiner relies on the passage of Girod at col. 7, line 50 – col. 8, line 14 (reproduced above) in support of this assertion. As noted by the Examiner, the bit rate may be represented in units of time and given a maximum bit rate and a data size, a predicted transmit time may be calculated. However, it will be appreciated that the actual transmit time of data typically is dependent on the additional particular characteristics of the transmission channel and the display data, such as the instantaneous bit rate of the transmission channel, overhead in formatting the data for transmission, and the like, and therefore typically isn’t determined simply based on the maximum bit rate and the data size. Turning to the disclosure of Girod, the Applicant respectfully submits that the cited passage of Girod fails to disclose or suggest that the actual transmit time of a display stream is determined in any way. Moreover, no passage of Girod discloses or suggests that an actual transmit time is compared to a predicted transmission time to determine whether the actual transmit time meets the predicted transmit time are within a predetermined tolerance as recited by claim 33.

In addition to failing to establish that Girod discloses or suggests the limitations of determining, for each display stream of a plurality of display streams, if an estimated transmit time meets an actual transmit time within a predetermined tolerance, the Office Action fails to assert that Putzolu discloses or suggests these limitations. Accordingly, the Office Action fails to establish that the proposed combination of Girod and Putzolu discloses or suggests each and every limitation of claim 33, as well as claims 34-36 and 44 at least by virtue of their dependency from claim 33. Moreover, these claims recite additional limitations neither disclosed nor suggested by Girod or Putzolu. For example, claim 34 recites the additional limitations of wherein the predetermined tolerance is based on a predetermined transmission rate to provide real time simultaneous display of each of the plurality of display streams. As similarly noted above with respect to claim 9, neither Girod nor Putzolu discloses or suggests transmitting a plurality of display streams for real time simultaneous display as recited by claim 34.

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<sup>2</sup> Claims 34-36, 39-41 and 44 were listed as rejected in view of only Girod at page 5 of the Office Action. However, as these claims are dependent from one of base claims 33 or 37, their rejection is addressed in conjunction with the rejection of base claims 33 and 37.

Claim 37 recites the limitations of determining, for each multimedia channel in a multimedia data stream, whether an actual transmission time for a multimedia channel matches a predicted transmission time within a predetermined tolerance. As noted above with respect to claim 33, neither Girod nor Putzolu discloses or suggests determining the actual transmission time for a multimedia channel, so the proposed combination of Girod and Putzolu necessarily fails to disclose or suggest determining whether an actual transmission time of a multimedia channel matches a predicted transmission time within a predetermined tolerance as recited by claim 37.

Claim 37 further recites the limitations of reducing an amount of data associated with a first multimedia channel when it is determined that the actual transmission time of the first multimedia channel exceeds the predicted transmission time by an amount greater than the predetermined tolerance. As Girod and Putzolu fail to disclose or suggest determining the actual transmission time of a multimedia channel, the proposed combination of Girod and Putzolu necessarily fails to disclose or suggest the limitations of reducing an amount of data of a multimedia channel when the actual transmission time is determined to exceed a predicted transmission time by an amount greater than a predetermined tolerance as recited by claim 37. Moreover, as noted above, Girod discloses that only a compressed version of the video in signal is transmitted. As Girod fails to disclose or suggest performing additional compression on an already compressed version of the video in signal, Girod necessarily fails to disclose or suggest further reducing an amount of data associated with a compressed version of the video in signal as would be consistent with claim 37, regardless of whether the actual and predicted transmission times of the compressed version of the video in signal are within a predetermined tolerance.

As established above, the proposed combination of Girod and Putzolu fails to disclose or suggest at least the limitations of claim 37 of: (1) determining, for each multimedia channel in a multimedia data stream, whether an actual transmission time for a multimedia channel matches a predicted transmission time within a predetermined tolerance; and (2) reducing an amount of data associated with a first multimedia channel when it is determined that the actual transmission time of the first multimedia channel exceeds the predicted transmission time by an amount greater than the predetermined tolerance. Accordingly, the Office Action fails to establish that the proposed combination of Girod and Putzolu discloses or suggests each and every limitation of claim 37, as well as claims 38-41 at least by virtue of their dependency from claim 37.

Moreover, these claims recite additional limitations neither disclosed nor suggested by Girod or Putzolu.

In view of the foregoing, it is respectfully submitted that the obviousness rejection of claims 27, 29, 33-41 and 44 is improper at this time and the withdrawal of this rejection therefore is respectfully requested.

### **Conclusion**

It is respectfully submitted that the present application is in condition for allowance, and an early indication of the same is courteously solicited. The Examiner is respectfully requested to contact the undersigned by telephone at the below listed telephone number in order to expedite resolution of any issues and to expedite passage of the present application to issue, if any comments, questions, or suggestions arise in connection with the present application.

The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-1835.

Respectfully submitted,

25 March 2005  
Date



Ryan S. Davidson, Reg. No. 51,596,  
On Behalf Of  
J. Gustav Larson, Reg. No. 39,263,  
Attorney for Applicants  
TOLER, LARSON & ABEL, L.L.P.  
5000 Plaza On The Lake, Suite 265  
Austin, Texas 78746  
(512) 327-5515 (phone) (512) 327-5452 (fax)